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April 6, 2011

VIA E-FILING
Ms. Jocelyn D. Boyd
Chief Clerk of the Commission
SC Public Service Commission
P. O. Drawer 11649
Columbia, SC 29211

RE: Application of Duke Energy Carolinas, LLC for Approval
Decision to Incur Nuclear Generation Pre-Construction Costs
DOCKET NO.: 2011-20-E

Dear Ms. Boyd:

Enclosed please find for filing the Direct Testimony of Kevin W. O'Donnell filed on behalf of the South Carolina Energy Users Committee ("SCEUC") in the above-captioned matter. By copy of this letter, I am serving all parties of record.

If you have questions, please do not hesitate to contact me.

Sincerely,

ELLIOTT & ELLIOTT, P.A.

Scott Elliott

SE/jcl

Enclosure

cc: All parties of record w/enc.

BEFORE THE

SOUTH CAROLINA

PUBLIC SERVICE COMMISSION

DOCKET NO. 2011-20-E

In the Matter of:

Amended Project Development Application of)
Duke Energy Carolinas, LLC for Approval of Decision)
to Incur Nuclear Generation Pre-Construction Costs)

Prepared Direct Testimony

of

Kevin W. O'Donnell, CFA

On Behalf of

South Carolina Energy Users Committee

April 6, 2011

BEFORE THE

SOUTH CAROLINA PUBLIC SERVICE COMMISSION

DOCKET NO. 2011-20-E

DIRECT TESTIMONY OF KEVIN W. O'DONNELL, CFA

Q. PLEASE STATE YOUR NAME, POSITION, AND BUSINESS ADDRESS FOR THE RECORD.

A. My name is Kevin W. O'Donnell. I am President of Nova Energy Consultants, Inc. My business address is 1350 Maynard Rd., Suite 101, Cary, North Carolina 27511.

Q. ON WHOSE BEHALF ARE YOU PRESENTING TESTIMONY IN THIS PROCEEDING?

A. I am testifying on behalf of the South Carolina Energy Users Committee (SCEUC), which is an industrial trade association in South Carolina. Many of SCEUC's members take retail electric service from Duke Energy and will be impacted by the proceedings in this case.

Q. PLEASE SUMMARIZE YOUR EDUCATIONAL BACKGROUND AND RELEVANT EMPLOYMENT EXPERIENCE.

A. I have a Bachelor of Science in Civil Engineering from North Carolina State University and a Master of Business Administration from the Florida State University. I have worked in utility regulation since September 1984, when I joined the Public Staff of the North Carolina Utilities Commission (NCUC). I left the NCUC Public Staff in 1991 and have worked continuously in utility consulting since that time, first with Booth & Associates, Inc. (until 1994), then as Director of Retail Rates for the North Carolina Electric Membership Corporation (1994-1995), and since then in my own consulting firm. I have been accepted as an expert witness on rate of return, cost of capital, capital structure, cost of service, and other regulatory issues in general rate cases, fuel cost

proceedings, and other proceedings before the North Carolina Utilities Commission, the South Carolina Public Service Commission (SC PSC), the Virginia State Commerce Commission, and the Florida Public Service Commission (FL PSC). In 1996, I testified before the U.S. House of Representatives, Committee on Commerce and Subcommittee on Energy and Power, concerning competition within the electric utility industry. Additional details regarding my education and work experience are set forth in Appendix A to my direct testimony.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A. The purpose of my testimony in this proceeding is to present to the Commission my recommendation to the Commission regarding Duke Energy's request for approval of pre-construction costs related to the utility's proposed Lee Nuclear Plant.

Q. PLEASE DESCRIBE THE COMPANY'S APPLICATION IN THIS PROCEEDING.

A. In the current case, Duke Energy Carolinas is seeking Commission approval that will allow Duke to continue its development of the Lee Nuclear plant so that the Company can secure a certificate of license (COL) from the Nuclear Regulatory Commission (NRC) in 2013 with the ultimate plan being that the Lee plant will be operational by 2021.

Q. WHAT SPECIFIC COSTS IS DUKE SEEKING APPROVAL FOR AS NUCLEAR DEVELOPMENT COSTS?

A. Duke is seeking recovery of the following costs as nuclear development costs:

- COLA Preparation – costs related to the preparation of the certificate of license application (COLA) that was submitted to the NRC on December 13, 2007;
- NRC Review and Hearing Fees — costs associated with answering data requests from the NRC regarding the COLA as well as additional revisions required by the COLA. Included in these costs are also expenses required for updates to Duke's

application to the Department of Energy for a Loan Guarantee for Nuclear Power Facilities.

- Land and Right of Way Purchases – expenses associated with the purchase of roughly 4,000 acres of land needed for the construction of the Lee plant, a nearby pond, and rights-of-way for railroads.
- Pre-construction and Site Preparation — includes costs associated with removing onsite legacy structures as well as engineering work needed for bringing water, sewer, transmission, and railroads to and from the site. These costs also include traffic improvements around the site as well as ongoing security and site maintenance.
- Supply Chain, Construction Planning and Detailed Engineering - costs of working with suppliers to define an entire project scope and estimates. This group of costs also includes site-specific costs incurred from 2011 to 2013.
- Operational Planning – the development of plant procedures, programs and training material.

Q. HOW MUCH MONEY DOES DUKE ANTICIPATE SPENDING IN PROJECT DEVELOPMENT COSTS PRIOR TO THE RECEIPT OF A CERTIFICATE OF LICENSE FOR THE PLANT?

A. Duke anticipates spending up to $459 million in project development costs before the NRC grants a COL for the Lee Nuclear Plant.

Q. IS DUKE CURRENTLY SEEKING TO INCREASE RATES TO PAY FOR THE NUCLEAR PROJECT DEVELOPMENT COSTS TO-DATE?

A. No. At the present time, Duke is not seeking permission to increase rates to consumers for the recovery of these project development costs.

Q. HOW WILL DUKE ULTIMATELY RECOVER THE ANTICIPATED $459 MILLION IN NUCLEAR DEVELOPMENT COSTS?

A. It is anticipated that Duke will, sometime in the foreseeable future, apply to the Commission for recovery of nuclear costs through the Base Load Review Act (BLRA).

When Duke makes this filing, it will propose a schedule for plant construction as well as a cost recovery plan for financing costs to be spread out over the anticipated life of the plant.

Q. DO YOU BELIEVE THE COMMISSION SHOULD APPROVE DUKE'S APPLICATION TO CONTINUE TO APPROVE DEVELOPMENT COSTS ASSOCIATED WITH THE LEE NUCLEAR PLANT?

A. No, not at this time. Duke's application in this proceeding was filed on January 7, 2011. Since that time, a devastating earthquake and tsunami hit Japan on March 11, 2011. The tsunami that occurred after the earthquake caused a very serious accident at the Fukushima Daiichi plants. This accident has reportedly resulted in at least a partial core meltdown at one of the nuclear reactors at this site and the release of radioactive material in and around the Fukushima plant. This situation is ongoing at the time of this testimony with no clear end in sight.

There is much to be learned from the Fukushima accident. It is highly possible, if not probable, that the NRC and all owners of nuclear facilities throughout the world will make changes to the operation and design of nuclear plants.

In light of the Fukushima disaster, I do not believe it is proper for Duke to proceed with nuclear development costs at the Lee Nuclear Plant until the world community and the NRC, to be specific, has had time to understand exactly what has happened at the Fukushima plant.

Q. CAN WE ANTICIPATE THAT PLANT DESIGN AND PLANT OPERATION PROCEDURES WILL BE CHANGED IN LIGHT OF THE JAPANESE NUCLEAR ACCIDENT?

A. Yes. In Appendix B is an article from *The Wall Street Journal* that discusses how the United States nuclear industry is watching the unfolding events in Japan. The article cites comments from Rep. Edward J. Markey, a Democrat from Massachusetts, calling for a moratorium on seismically active areas and an investigation into whether design flaws

contributed to the Fukushima accident. Also in that article is a quote from Rep. Joe Barton, a Republican from Texas, which states:

> "Even proponents of nuclear power want to get to the bottom" of the Japanese accident and figure out what went wrong – and how to fix it.

Also found in Appendix B is an article from the April 4, 2011 edition of *Energy Biz* entitled "Nuclear Expansion will get Delayed." This article discusses recent Congressional testimony and states:

> Testifying before the Senate Appropriations Committee's Energy and Water Development Subcommittee, utilities along with regulators and scientists all concurred that nuclear energy has proven to safe and reliable here for three decades. But if current plants are to be relicensed and if new ones are to get built, construction designs and operational processes must be modified.

Based on the many articles that have been in the news over the past month, there is little doubt that changes are being examined in the nuclear industry. For this reason, I believe it is proper for the Commission to delay Duke's request in the current case so that the utility and nuclear regulators can assess the Fukushima accident and how it may impact construction of the Lee nuclear plant.

Q. **WHAT POSITION HAS DUKE ENERGY STATED IN REGARD TO NUCLEAR CONSTRUCTION IN THE AFTERMATH OF THE FUKUSHIMA SITUATION?**

A. According to the April 5, 2011 edition of the *Charlotte Business Journal*, Duke CEO Jim Rogers has stated that the United States nuclear industry needs to take a pause to learn lessons from the Fukushima accident. To be specific, Mr. Rogers stated the following in an interview with CNN:

> We do need to pause. We do need to learn the lessons. We need to implement them. But I think at the end of the day, our industry is prepared to do that.

Mr. Rogers went on to say that he believed that the United States must continue to move forward in building nuclear plants. The *Charlotte Business Journal* can be found in Appendix B

Q. MR. O'DONNELL, ARE YOU RECOMMENDING THAT DUKE CEASE ALL OPERATIONS RELATED TO THE LEE PLANT?

A. No. I agree with Jim Rogers that the United States nuclear industry needs a brief time-out to learn the lessons from the Fukushima situation. The obvious concern about the Fukushima accident is that the nuclear industry may create specific design changes for the proposed Westinghouse AP1000 nuclear reactor that are heretofore unanticipated. These changes may, in turn, affect the financial feasibility of the projects. Since a thorough review of the accident is now ongoing, it seems only logical for Duke to take a brief time-out in its construction timeline to wait for possible changes.

My specific recommendation is that Duke suspend its application in this filing for a period not-to-exceed six months. The utility should then re-file its application in this case with an update, if any, of the development costs associated with the Lee plant.

Q. **DOES THIS COMPLETE YOUR TESTIMONY?**

A. Yes, it does.

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APPENDIX A

Appendix A

Kevin W. O'Donnell, CFA
President
Nova Energy Consultants, Inc.
1350 SE Maynard Rd.
Suite 101
Cary, NC 27511

Education

I received a B.S. degree in Civil Engineering - Construction Option from North Carolina State University in May of 1982 and a Masters of Business Administration in Finance from Florida State University in August of 1984.

Professional Certification

I am a Chartered Financial Analyst (CFA) and a member of the Association of Investment Management and Research.

Work Experience

In September of 1984, I joined the Public Staff of the North Carolina Utilities Commission as a Public Utilities Engineer in the Natural Gas Division. In December of 1984, I transferred to the Public Staff's Economic Research Division and held the position of Public Utility Financial Analyst. In September of 1991, I joined Booth & Associates, Inc., a Raleigh, North Carolina, based electrical engineering firm, as a Senior Financial Analyst. I stayed in this position until June 1994, when I accepted employment as the Director of Retail Rates for the North Carolina Electric Membership Corporation. In January 1995, I formed Nova Utility Services, Inc., an energy consulting firm. In May

of 1999, I changed the name of Nova Utility Services, Inc. to Nova Energy Consultants, Inc.

Along with my work with Nova Energy Consultants, Inc., I also provide financial consulting services to MAKROD Investment Associates of Verona, NJ. MAKROD is a money management firm that specializes in portfolio management services for high wealth individuals and institutional investors.

Testimonies

North Carolina

I have testified before the North Carolina Utilities Commission in the following general rate case proceedings: Public Service Company of North Carolina, Inc. (Docket No. G-5, Sub 200, Sub 207, Sub 246, Sub 327, and Sub 386); Piedmont Natural Gas Company (Docket No. G-9, Sub 251 and Sub 278); General Telephone of the South (Docket No. P-19, Sub 207); North Carolina Power (Docket No. E-22, Sub 314); Piedmont Natural Gas Company (Docket No. E-7, Sub 487); Pennsylvania & Southern Gas Company (Docket No. G-3, Sub 186); and in several water company rate increase proceedings. I also submitted pre-filed testimony, and/or assisted in the settlement process, in Docket Nos. G-9, Sub 378, Sub 382, Sub 428 and Sub 461, which were general rate cases involving Piedmont Natural Gas Company; in Docket No. G-21, Sub 334, North Carolina Natural Gas' most recent general rate case; in Docket No. G-5, Sub 356, Public Service of North Carolina's 1995 general rate case; and in Docket No. G-39, Sub 0, Cardinal Extension Company's rate case. Furthermore, I testified in the 1995 fuel adjustment proceeding for Carolina Power & Light Company (Docket No. E-2, Sub 680) and submitted pre-filed testimony in Docket No. E-7, Sub 559, which was Duke Power's 1995 fuel adjustment proceeding. I also submitted pre-filed testimony and testified in Duke's 2001 fuel adjustment proceeding, which was Docket No. E-7, Sub 685.

Furthermore, I testified in Docket No. G-21, Sub 306 and 307, in which North Carolina Natural Gas Corporation petitioned the Commission to establish a natural gas expansion fund. I also submitted testimony in the Commission's 1998 study of natural gas transportation rates that was part of Docket No. G-5, Sub 386, which was the 1998 general rate case of Public Service Company of North Carolina. In September of 1999, I testified in Docket Nos. G-5, Sub 400 and G-43, which was the merger case of Public Service Company of North Carolina and SCANA Corp. I also submitted testimony and stood cross-examination in the holding company application of NUI Corporation, a utility holding company located in New Jersey, which was NCUC Docket No. G-3, Sub 224, as well as NUI's merger application with Virginia Gas Company, which was Docket No. G-3, Sub 232. I also submitted pre-filed testimony and stood cross-examination in Docket No. G-3, Sub 235, which involved a tariff change request by NUI Corporation. I testified in another holding company application in Docket No. E-2, Sub 753; G-21, Sub 387; and P-708, Sub 5 which was the holding company application of Carolina Power & Light. In June of 2001, I submitted testimony and stood cross-examination in Docket No. E-2, Sub 778, which was CP&L's application to transfer Certificates of Public Convenience and Necessity (CPCN) from two of the Company's generating units to its non-regulated sister company, Progress Energy Ventures. In November of 2001, I testified in Duke Energy's restructuring application, which was Docket No. E-7, Sub 694. In January 2002, I presented testimony in the merger application of Duke Energy Corp. and Westcoast Energy. In April of 2003, I submitted testimony in Dockets Nos. G-9, Sub 470, Sub 430, and E-2, Sub 825, which was the merger application of Piedmont Natural Gas and North Carolina Natural Gas. In May of 2003, I submitted testimony in the general rate case of Cardinal Pipeline Company, which was Docket No. G-39, Sub 4. In July 2003, I filed testimony in Docket No. E-2, Sub 833, which was CP&L's 2003 fuel case proceeding. I prepared pre-filed testimony and stood cross-examination in the merger application of Piedmont Natural Gas and Eastern North Carolina Natural Gas. In July of 2005, I prepared pre-filed testimony in Carolina Power & Light's fuel case in North Carolina. In August of 2005 I assisted in the settlement of Piedmont's 2005 general rate case. In June,

2006, I submitted rebuttal testimony in Docket No. E-100, Sub 103, which was the investigation of integrated resource planning (IRP) in North Carolina. Also in the month of June, 2006, I submitted testimony in Docket No. G-9, Sub 519, which was the application of Piedmont Natural Gas to change its tariffs and service regulations. In August, 2006, I assisted in the settlement of the rate case of Public Service of North Carolina in Docket No. G-5, Sub 481. In December of 2006, I prepared direct testimony and stood cross-examination in Docket No. E-7, Sub 751, which was application of Duke Power to share net revenues from certain wholesale power transactions. In January, 2007, I submitted testimony in the application of Duke Energy in Docket No. E-7, Sub 790, which was in regard to the construction of two 800 MW coal fired generation units in Rutherford County, North Carolina. In Sept, 2008, I assisted in the settlement of Duke Energy's 2007 rate case. In June, 2008, I filed testimony in Duke Energy's Save-A-Watt energy efficiency filing. In May, 2009, I filed testimony in a generic proceeding before the North Carolina Utilities Commission regarding changes in utility integrated resource planning in the state. In July, 2009, I filed testimony in support of the petition of Western Carolina University (Docket No. E-35, Sub 37) for an increase in its retail electric rates in North Carolina. In September, 2009, I submitted testimony in Duke Energy's 2009 rate case, which was Docket No. E-7, Sub 909, in North Carolina.

South Carolina

In August of 2002, I submitted pre-filed testimony and stood cross-examination before the South Carolina Public Service Commission in Docket No. 2002-63-G, which was Piedmont's 2002 general rate case. In October of 2004, I submitted pre-filed testimony and stood cross-examination in the general rate case of South Carolina Electric & Gas. In March 2005, I prepared pre-filed testimony and assisted in the settlement involving the fuel application proceeding of South Carolina Electric & Gas. In April of 2005, I prepared pre-filed testimony and assisted in the settlement of Carolina Power & Light's fuel case in South Carolina. In March 2006, I assisted in the settlement involving the fuel application proceeding of South Carolina Electric & Gas. In November of 2007 I

assisted in the settlement of the 2007 South Carolina Electric & Gas general rate case proceeding. In October, 2008, I submitted testimony in the 2008 South Carolina Electric & Gas base load review act proceeding. In November, 2009, I submitted testimony in the 2009 Duke Energy rate case. In May, 2010, I submitted testimony and stood cross-examination in the 2010 South Carolina Electric & Gas rate case.

Florida

In January, 2009, I submitted pre-filed testimony and stood cross-examination before the Florida Public Service Commission on the issue of rate of return in the Tampa Electric Rate case, which was Docket No. 080317-EI.

Virginia

In June, 2010, I submitted pre-filed testimony before the Virginia State Commerce Commission and assisted in the settlement process of a case involving a rate design issue.

United States Congress

In May of 1996, I testified before the U.S. House of Representatives, Committee on Commerce and Subcommittee on Energy and Power concerning competition within the electric utility industry.

I have also worked with North Carolina and South Carolina municipalities in presenting comments to the Federal Energy Regulatory Commission regarding the opening of the wholesale power markets in the Carolinas.

Publications

I have also published the following articles: Municipal Aggregation: The Future is Today, *Public Utilities Fortnightly*, October 1, 1995; Small Town, Big Price Cuts, *Energy Buyers Guide*, January 1, 1997; and Worth the Wait, But Still at Risk, *Public Utilities Fortnightly*, May 1, 2000. All of these articles dealt with my firm's experience in

working with small towns that purchase their power supplies in the open wholesale power markets.

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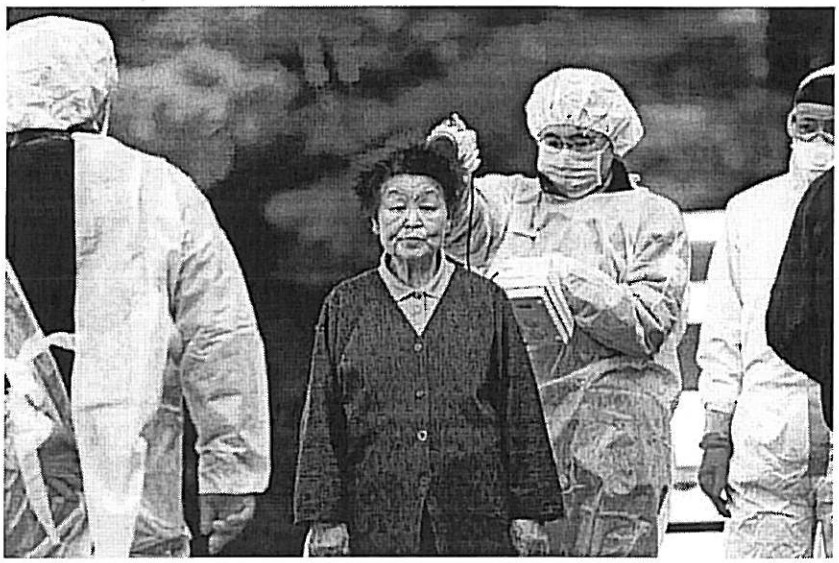
APPENDIX B

WORLD NEWS | MARCH 14, 2011

U.S. Could Rethink Nuclear Reliance

Industry Ponders Political Fallout in America Following the Problems in Japan

By STEPHANIE SIMON



Associated Press

Residents who were evacuated from areas surrounding the Fukushima nuclear facilities damaged in Friday's massive earthquake are checked for radiation contamination in Koriyama city, Fukushima prefecture, Sunday.

The U.S. nuclear power industry believed it was poised for a renaissance.

President Obama's 2012 budget proposed $36 billion in loan guarantees to build nuclear power plants. He called, too, for spending hundreds of millions on nuclear energy research and modern reactor design. Powerful Republicans were on board, calling for expansion of nuclear power a rare opportunity for bipartisan cooperation.

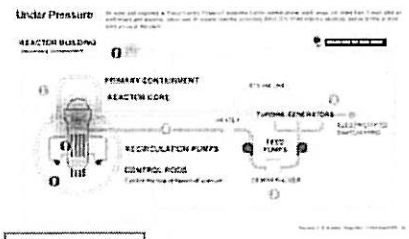
Then an explosion at an earthquake-damaged nuclear plant in northern Japan on Saturday tore apart a building housing a reactor containment structure. Smoke billowed from the plant. Japanese officials ordered an evacuation of tens of thousands

View Full Image

Associated Press

Patients who might have had radiation exposure are carried into a treatment compound in Nihonmatsu city.

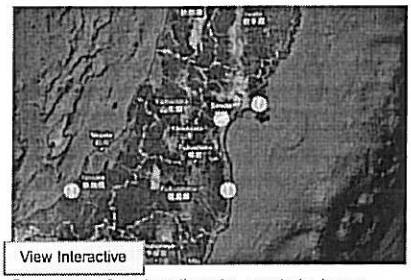
Power Plant Under Pressure



View Interactive

See what went wrong at the nuclear plant.

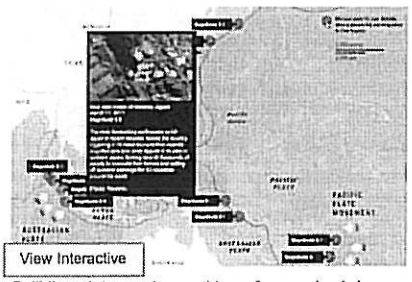
Japan Quake's Effects



View Interactive

See a map of post-earthquake events in Japan, Hawaii and the U.S. West Coast.

Shaky Ground



View Interactive

Colliding plates under earth's surface make Asia Pacific one of the most tectonically active region on earth.

Disastrous Japan Earthquakes

of people. Later, officials said cooling systems were failing at a second reactor at the same plant, putting it at risk of meltdown.

Industry experts and analysts at once began to ponder the political fallout in the United States.

The 1979 nuclear accident at Three Mile Island in Pennsylvania froze the nuclear power industry in the U.S. No new licenses were granted for 30 years. The Three Mile incident -- sparked by the failure of a cooling system -- did not cause any deaths, but many Americans were terrified by the plant's move to vent radioactive steam into the air and by ominous talk of a potential meltdown.

The 1986 nuclear accident at Chernobyl only reinforced American skepticism of nuclear power.

But in recent years, the industry has steadily chipped away at that wariness. Industry executives and their political allies promote nuclear power as "clean energy," because, unlike coal or natural gas, it does not produce the greenhouse gases linked to global warming.

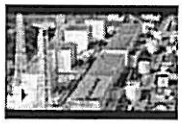
The Nuclear Regulatory Commission is now reviewing 20 more license applications from a dozen companies seeking to produce nuclear power. Site preparations for new reactors have begun in Georgia and South Carolina, and plans are underway to finish a reactor that was started years ago but never completed in Tennessee. That reactor should come online in 2013 and those in South Carolina and Georgia are expected to begin operations in 2016. All told, the industry expects up to eight new reactors to be churning out power by 2020, according to Mitch Singer, a spokesman for the Nuclear Energy Institute, an industry trade group.

The U.S. currently has 104 nuclear plants in 31 states. Together, they produce 20% of the nation's electricity.

Mr. Singer said he doesn't think the accident in Japan will derail the U.S. nuclear boom. In fact, he said the explosion should reassure Americans that their own plants will be prepared for any emergency, because the industry will disseminate lessons learned in Japan around the globe, helping other reactors shore up their defenses against even devastating natural disasters, like the quake and the tsunami that followed.

Video ›

Faithful Pray for Japan
1:54



News Hub:Japan Battles to Control Nuclear Reactors
24:38

News Hub: Supply Routes Blocked in Northern Japan
8:51

More in World

Rescuers Dig for Survivors, Thousands Feared Dead

Officials Struggle to Prevent Meltdown

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Factories Close as Power Is Cut

Doubts Form in Shadow of Nuclear Plants

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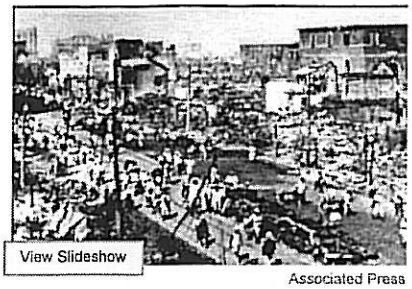

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Associated Press

See a historical gallery of past earthquakes in Japan.

The World's Biggest Earthquakes

View Interactive

Associated Press

A photographer looked over wreckage as smoke rose in the background from burning oil storage tanks at Valdez, Alaska, March 29, 1964.

"At this point," Mr. Singer said, "I don't think we're going to see a major impact on the U.S. nuclear industry."

But Peter Bradford, a former member of the Nuclear Regulatory Commission, predicted Americans would respond to the Japanese disaster with "greatly heightened skepticism and heightened unwillingness to have nuclear power plants located in one's own neighborhood."

He predicted as well greater regulatory scrutiny of existing nuclear plants that are seeking to extend their operating licenses, especially when those plants are located in seismically active zones, such as Southern California's San Onofre Nuclear Generation Station and Diablo Canyon Power Plant.

"The image of a nuclear power plant blowing up before your eyes on the television screen is a first," Mr. Bradford said. "That cannot be good for an industry that's looking for votes in Congress and in the state legislatures."

Mr. Obama's proposal to expand loan guarantees to aid construction of new reactors might also take a hit, especially given the push in Congress to cut spending, said Robert Alvarez, a former senior policy advisor for the U.S. Department of Energy who now works on nuclear disarmament issues. "There might be a political tsunami," Mr. Alvarez said.

Within hours of the blast at the Japanese nuclear plant, Rep. Edward J. Markey, the top Democrat on the House Natural Resources Committee, called on the Obama administration to impose a moratorium on building new reactors in seismically active areas and to require those already in earthquake-prone zones to be retrofitted with stronger containment systems. He also called for a thorough investigation of whether design flaws contributed to the Japanese accident. Twenty three reactors in the U.S. use the same design parameters as Japan's crippled Fukushima Daiichi plant.

"The unfolding disaster in Japan must produce a seismic shift in how we address nuclear safety here in America," Rep. Markey said.

Rep. Joe Barton, a Republican from Texas who has long supported nuclear power, said he hoped the damage to the reactor in Japan didn't turn the American public off nuclear energy. But he added that "even proponents of nuclear power want to get to the bottom" of the Japanese accident and figure out what went wrong – and how to fix it.

"I believe very strongly in the future of nuclear power," Mr. Burton said, "but those who support it have to insist that the safety redundancy features perform" even during a catastrophic natural disaster.

Even before the explosion in Japan, economic reality had taken a bite out of the nuclear industry's ambitious expansion plans in the U.S.

Natural gas has been so cheap that utilities have turned to it to generate electricity, rather than contemplate building multi-billion-dollar reactors. The recession has also dampened demand for electrical power, further diminishing the appeal of a massive investment in nuclear facilities.

Constellation Energy Corp. recently backed out of plans to build a new reactor at an existing nuclear plant in Calvert Cliffs, Md., because of high expense and low demand. The

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Department of Energy has approved just one project, in Georgia, for its loan guarantees.

Nuclear power continues to expand abroad however, with dozens of new power plants planned in China, India and Europe. And even skeptics of nuclear power in the U.S. said it's too early to tell how the Japanese reactor explosion will affect the industry's long-term future. If radiation leaks turn out to be minimal and emergency response plans are proved effective, the American public might take it as a good sign, said Mr. Singer, the industry spokesman. "It would go a long way to reassuring people that we can handle some of these challenging situations," he said.

Quake Hits Japan

- **Rescuers Dig for Survivors, But Thousands Feared Dead**
- **Officials Struggle to Prevent Meltdown at Two Reactors**
- **Reactor Failures Spark Questions on Safety Systems**
- **Damaged Nuclear-Power Plants Could Spew Range of Emissions**
- **Doubts Form in Shadow of Nuclear Plants**
- **Quake to Test Japan's Economy, Markets**
- **Asia Closely Watches Japan's Nuclear Woes**
- **Factories Close As Power Is Cut**

—Naureen Malik contributed to this article

Write to Stephanie Simon at stephanie.simon@wsj.com

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Nuclear Expansion will get Delayed

Ken Silverstein | Apr 04, 2011

In the wake of Japan's earthquake and tsunami, thought leaders here in the United States are largely united that nuclear energy will undergo serious reviews and potential changes, which will cause delays.

Testifying before the Senate Appropriations Committee's Energy and Water Development Subcommittee, utilities along with regulators and scientists all concurred that nuclear energy has proven to safe and reliable here for three decades. But if current plants are to be relicensed and if new ones are to get built, construction designs and operational processes must be modified.

"U.S. nuclear power plants are safe. Still, we cannot be complacent about the accident at Fukushima," says William Levis, president and chief operating officer at PSEG Power, which operates three reactors in New Jersey and is part owner of two others in Pennsylvania. "We know we operate in an environment where the penalties for mistakes are high and where credibility and public confidence, once lost, are difficult to recover."

Testifying on behalf of the Nuclear Energy Institute, Levis says that the industry has invested about $6.5 billion in recent years so as to upgrade the 104 nuclear plants now operating in the United States. That is, it has replaced steam generators and reactor vessel heads. He furthermore emphasizes that the cumulative effect of such investment over 30 years serves to mitigate the changes for the type of accident that has occurred in Japan.

Japan's Fukushima Daiichi nuclear plant withstood the massive earthquake that hit. But it was the subsequent tsunami and those huge waves that knocked out all the

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The Fukushima nuclear accident in Japan will:

- ☐ Have no impact on planned nuclear projects in the United States.
- ☐ Will delay planned nuclear projects in the United States by several years.
- ☐ Will led to the termination of most proposed nuclear projects in the United States.

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generators on site. Therefore, the spent irradiated fuel could not be properly cooled and the concern is the extent to which such radiation has escaped.

Once the main source of electrical power to the plant is shut down, the backup generators are supposed to kick in. The diversity and redundancy of the emergency cooling systems provide a high level of certainty but it is not absolutely guaranteed to cool the irradiated fuel, says David Lochbaum, director of Nuclear Safety for the Union of Concerned Scientists, before Congress. Even if it fails, he adds that the reactor is encased in a three-to-foot concrete containment building.

Storage is Hot Issue

After the fuel is used, it is stored in a pool. After it is sufficiently cooled, it is then moved to storage. In this country that takes place on site in above-ground steel and concrete encased dry cask units. If there a connection between what happened in Japan and what could occur here, it is the storage of that radioactive material before it goes into long-term, on site storage.

"The irrefutable bottom line is that we have utterly failed to properly manage the risk from irradiated fuel stored at our nation's nuclear plants," says Lochbaum. An immediate step could be the acceleration of the transfer of used fuel from the pools where it is immediately placed to the dry cask storage where it kept on site. One question that U.S. policymakers will need to revisit is whether this country ought to have a permanent, centralized off-site repository.

U.S. nuclear regulators are actively engaged with Japanese officials so as to help them while also learning from their experience. To that end, the Nuclear Regulatory Commission continually forces plant operators here to make revisions to their designs. As a result of September 11, 2001, for example, it required plants to develop new procedures to deal with severe situations.

While the ultimate fate of nuclear power is uncertain, some outcomes are good bet, says Ernest Moniz, director of MIT's Energy Initiative. The cost of doing business at nuclear reactors will rise, reflecting new requirements for on-site spent fuel management. Meantime, he expects that the relicensing of 40-year-old nuclear plants for another 20 years will face added scrutiny and create delays. Even the 60 plants that have already won relicensing approval could get revisited.

"On the positive side, nuclear power plants have low operating and fuel costs compared with coal and natural gas plants, and the owners might be able to absorb reasonable costs," Monitz testified. "However, the business decisions would be on a plant-by-plant basis depending on the design basis threat assigned to the plant's specific circumstances. In many cases, perhaps most, the design basis threats are likely to be deemed sufficiently conservative and remain unchanged."

After the Japanese situation is thoroughly assessed, U.S. regulators will take that information and apply it here. In the end, the current nuclear fleet with likely get relicensed after the appropriate changes are made but any expansion will be delayed because of financial and safety concerns.

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Duke Energy CEO: U.S. must build nuke plants

Charlotte Business Journal - by John Downey

Date: Tuesday, April 5, 2011, 2:10pm EDT

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Duke Energy CEO **Jim Rogers** says the Japanese nuclear crisis means it's time to hit the pause button on nuclear development, but ultimately the United States must build new nuclear plants.

"We do need to pause. We do need to learn the lessons. We need to implement them," he tells CNN's Poppy Harlow in a video interview Monday.

"But I think at the end of the day, our industry is prepared to do that," he says. "And more importantly, we need to start building new nuclear in this country because we're going to start retiring our nuclear as earlier as 2019."

Rogers spoke on a panel at *Fortune* magazine's fourth annual Brainstorm Green conference.

Cap and trade demonized

Scott Woolley reports on the Fortune Tech blog that Rogers expects no strong climate legislation from the current Congress and probably not the next. Cap and trade, the system Rogers supports as a market solution to carbon regulation, has gotten a dirty name.

"Even though it was invented by Republicans, it has been demonized by Republicans," Rogers said, referring to the cap-and-trade program for sulfur nitrogen oxides developed during the administration of President George H.W. Bush.

Rogers has experienced some of that demonization firsthand. FreedomWorks, the conservative group chaired by former Republican House Majority Leader Dick Armey, has

called for Rogers to be fired for, among other things, supporting cap-and-trade legislation to control carbon emissions.

John Downey covers the energy industry for the Charlotte Business Journal.
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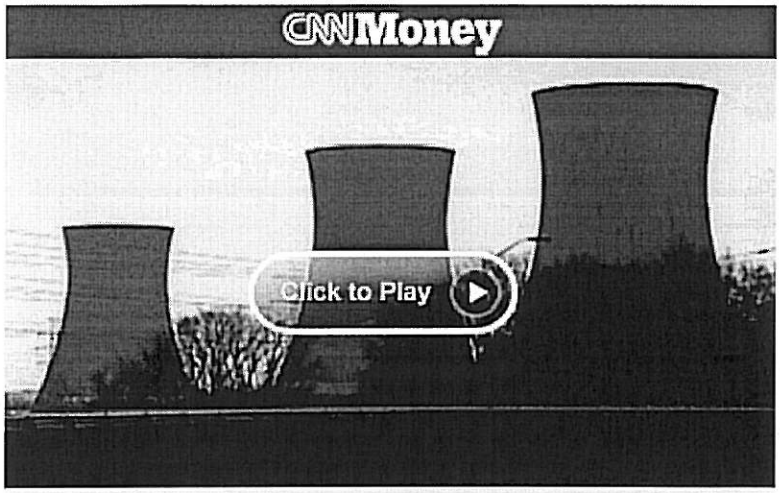

Duke will build new nuclear plants

Duke Energy CEO Jim Rogers says the company still plans to build new nuclear power plants despite the disaster in Japan.

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Tom Clements
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PLEADING: DIRECT TESTIMONY OF KEVIN W. O'DONNELL

April 6, 2011

Jackie C. Livingston, Paralegal

CERTIFICATE OF SERVICE

The undersigned employee of Elliott & Elliott, P.A. does hereby certify that (s)he has served below listed parties with a copy of the pleading(s) indicated below by mailing a copy of same to them in the United States mail, by regular mail, with sufficient postage affixed thereto and return address clearly marked on the date indicated below:

RE: Amended Project Development Application of Duke Energy Carolinas, LLC for Approval of Decision to Incur Nuclear Generation Pre-Construction Costs

DOCKET NO.: 2011-20-E

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